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INTERNATIONAL COOPERATION IN FINANCIAL ASSISTANCE AND TECHNOLOGY TRANSFER FOR SUSTAINABLE FOREST MANAGEMENT

Programme element II

Report of the Secretary-General

SUMMARY

The present report covers the implementation of the decisions of the United Nations Conference on Environment and Development (UNCED) related to element II, "International cooperation in financial assistance and technology transfer for sustainable forest management", of the programme of work of the Ad Hoc Intergovernmental Panel on Forests. The report aims to provide updated information and a preliminary analysis of the situation, as well as the outlook for forestry development in the area of financing and technology, with particular reference to international cooperation.

Finance and technology are considered to be interrelated components of investment, which is essential for socio-economic development and growth. Investment in forestry cuts across all aspects of sustainable forest management and development. Net investment is obtained by deducting disinvestment from gross investment. Based on estimates made, annual gross investment for forestry and forest industry in developing countries amounts to $13.5 billion; if this estimated investment is increased by 50 per cent to take into account missing components, such as non-wood forest products and services, infrastructure and institutions, the overall figure would be about $20 billion. At $25 per cubic metre of wood, tropical deforestation amounts to an annual disinvestment of $45 billion. As a result of deforestation, therefore, forestry in the developing countries, especially in the tropics, has been subject to a negative net investment of about $25 billion a year.

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There have been several estimates of the net investment required to achieve sustainable forest management in developing countries. In chapter 11 of Agenda 21, it was estimated at about $31.25 billion annually for the period 1993-2000. Several estimates made independently prior to UNCED by several agencies, such as the Food and Agriculture Organization of the United Nations (FAO), the World Resources Institute and the World Wide Fund for Nature, range from $4.5 billion to $18.0 billion a year. Recent studies by the International Tropical Timber Organization estimate a cost about $2.2 billion annually for the additional resources required to implement several priority actions in producer member countries for their sustainable forest management. These large differences on estimates for sustainable forest management reflect the need to clarify significant gaps between requirements and actual net investment.

Of the estimated $31.25 billion a year for the additional resources required for sustainable forest management, about $25.58 billion a year must be raised domestically, a daunting task for developing countries. Since countries have different sizes of forest resources and levels of forest industry, their capacity and capability to raise additional revenues domestically through selling forest products, the collection of royalties, and other forms of fees and taxes will also vary. In many countries, such problems are further compounded by a low budget allocation for forestry due to its low priority in national macro-policies, which is largely the result of distortion in national accounts and insufficient awareness about intangible forestry contributions. This is well reflected in the statistics contained in the present report: some countries can finance a large part of their forestry investment domestically, while others must rely heavily on the external sources.

There are cases of successful private-sector participation in large-scale reforestation/reafforestation programmes in developing countries. Such participation, however, is still relatively limited; private-sector participation is largely concentrated in the forest-based processing sector. Due to the long gestation period and risks associated with investment in forest resources, the private sector will only invest if attractive incentives are provided.

Investment from foreign sources falls under foreign assistance and foreign investment. Detailed information on the forestry component of total foreign investment in 1993 ($226 billion) is not available. Most foreign investment in forestry in developing countries is channelled through transnational corporations, which have substantially increased their involvement in forest-based industries. Although in previous decades such involvement was based on "straight" investment, this is now being replaced in favour of joint ventures due to the gradual growth of host country investors' abilities to mobilize capital.

Official development assistance (ODA) is an important source of foreign finance and technology transfer for many countries and an important potential catalyst in facilitating coordinated development. ODA is provided to developing countries bilaterally by donor countries and multilaterally through

international agencies. Some 20 donor countries and 13 multilateral agencies are actively involved in providing ODA for forestry. Multilateral assistance agencies include multilateral development banks, international agencies, non-official assistance agencies and non-governmental organizations. Multilateral mechanisms, such as the Global Environment Facility and Capacity 21, provide resources for targeted activities, including environmental conservation and country capacity development. In spite of its vital role, the availability of ODA in the year 1993 (the maximum achieved) amounted to only 27.2 per cent of the needs of the forestry sector as specified in chapter 11 of Agenda 21 (US$ 1.54 billion, against an annual estimated need of US$ 5.67 billion).

The post-UNCED trend in ODA for the forestry sector has not shown any significant increase: total ODA was US$ 1.43 billion in 1990 and US$ 1.54 billion in 1993 at current cost (without adjusting for inflation), and available indications are that even this small increase has not been maintained beyond 1993, and ODA has in fact been falling. The total amount of the FAO field and regular programme together fell from US$ 78.5 million in 1993 to US$ 70.0 million in 1994; World Bank loan approvals fell from US$ 278 million in 1994 to US$ 113 million in 1995; and similar trends have been noted in the case of a number of bilateral donors. In any case, chances of increased ODA for the forestry sector in the near future is expected to be minimal. An analysis of ODA, by donors, geographic distribution and field of action, is contained in the present report.

Experience with ODA has indicated several shortcomings whose removal could considerably improve its effectiveness, including a multiplicity of donors with different priorities and a lack of adequate coordination of ODA activities. The differing priorities of donors and recipients have also led to conflicts. The proliferation of frameworks for fund utilization has affected the capacity of countries to demand and receive ODA. There is also insufficient country commitment and low absorptive capacity. The problems created by the low absorptive capacity of many countries must be dealt with through expanded technical assistance targeted at building up human capital and appropriate institutions: this is an important responsibility of ODA.

Improved technological and planning capabilities are vital for sustainable forestry. Technology acquisition for forestry can take place through technology development locally or transfer of technology from outside. Generation of technology locally through national institutions is severely hampered by the lack of financial and human resources. In fact, most established research institutions are foreign-based, and have different views and perspectives about problems in developing countries. Since only 5 per cent of ODA is channelled to forestry research, compared to about 10 per cent for agriculture, it is no surprise that there has been a lack of new breakthroughs in forestry technology in the recent past.

One of the solutions to the technology gap in many developing countries is the transfer of technology. At the international level, there are a multitude of institutions with specific capabilities and comparative advantages for providing technology to countries in need. The major sources

of technology transfer to developing countries are foreign investors (including equipment suppliers), bilateral and multilateral assistance agencies, institutions of the Consultative Group on International Agricultural Research, non-governmental organizations and foundations, and technical cooperation among developing countries. Innovative arrangements through agreements with foreign firms have been tried in some countries, such as the INBio-Merck agreement for bio-prospecting in Costa Rica.

The economic potential of raising additional revenues through innovative financing has been discussed extensively. At the national level, that includes establishing various forms of taxes, full cost pricing, and the sale of management bonds. Although some of these innovations look promising, their feasibility is also subject to various factors, including current rates of royalties and taxes on forest products and services, size of forest resources and status of forest-based industries. Such innovations could be implemented in some countries thanks to the size of their forest resources and level of technologies, but many other countries would not be able to benefit.

A similar situation exists for external sources, such as debt-for-nature swaps, carbon off-sets, tradeable emission permits, bio-diversity patents etc. Although such innovations have been available for some time, their economic potential has not been fully realized. Except for debt-for-nature swaps, which have managed to attract about $76 million so far (still a relatively small figure), other innovations have yet to be fully implemented. Incentives and motivations to implement such innovations are greatly influenced by other factors, such as the introduction of a carbon tax, the size of the market for carbon sequestration and biological diversity.

CONTENTS

	Paragraphs	Page
INTRODUCTION	1 - 6	7
I. INVESTMENT IN FORESTRY	7 - 23	8
A. Estimation of current investment in forestry	9 - 17	8
B. Investment needs estimates	18 - 23	10
II. FINANCING FORESTRY DEVELOPMENT	24 - 52	11
A. Domestic sources	25 - 39	12
B. Foreign sources	40 - 45	17
C. Constraints in financing for forestry	46 - 52	18
III. ACQUISITION OF TECHNOLOGY	53 - 63	21
A. Technical cooperation among developing countries	59 - 60	23
B. Research	61 - 63	23
IV. DEVELOPMENT ASSISTANCE	64 - 98	24
A. Bilateral assistance	67 - 70	24
B. Multilateral assistance	71 - 82	25
C. Trends since the United Nations Conference on Environment and Development	83 - 89	27
D. Shortcomings of the official development assistance system	90 - 91	29
E. Improved mechanisms	92 - 98	30
V. INNOVATIONS IN FUND MOBILIZATION	99 - 112	31
A. External resource flows	100 - 105	31
B. Domestic resource flows	106 - 109	32
C. Institutions to support targeted financing for forestry	110 - 112	34
VI. CONCLUSIONS AND OPTIONS FOR FURTHER CONSIDERATION BY THE PANEL	113 - 116	35

CONTENTS (continued)

Page

Tables

1. Variations in funding levels of selected developing countries for forestry, 1991-1994 13

2. Official development assistance for forestry, 1986-1993 28

3. Share in official development assistance, by region, 1993 28

4. Change in volume of official development assistance devoted to forestry, 1986-1993 37

INTRODUCTION

1. The present report covers element II, "International cooperation in financial assistance and technology transfer for sustainable forest management", of the programme of work of the Ad Hoc Intergovernmental Panel on Forests. The report aims to provide updated information and a preliminary analysis of the situation, as well as the outlook for forestry development in the area of financing and technology, with particular reference to international cooperation. Official development assistance (ODA) receives the most detailed treatment. The report focuses on the developing countries, since the subject is particularly relevant to them and the necessary information is available; subsequent reports will provide more information on countries with economies in transition.

2. The work under programme element II is guided by the decisions taken by the Commission on Sustainable Development at its third session and further elaborated by the Panel at its first session.

3. The Commission defined programme element II as a need to explore ways of improving the efficiency and coordination of bilateral and multilateral assistance, and consider ways to address the critical areas relating to the transfer and development of environmentally sound technology on favourable terms, as mutually agreed, and the mobilization of financial resources, including the provision of new and additional resources with a view to assisting developing countries in pursuing policies and comprehensive strategies for achieving sustainable forest management, taking into account Principles 10 and 11 of the Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests 1/ (Forest Principles) and the Rome Statement on Forestry agreed by Ministers responsible for forests in March 1995.

4. At its first session, the Panel re-emphasized the need to explore and consider ways to address the areas relating to the transfer and development of environmentally sound technology on favourable terms, as mutually agreed, and the mobilization of financial resources to assist developing countries in pursuing policies and comprehensive strategies for achieving sustainable forest management, taking into account ongoing work of the Commission and other relevant processes. Consideration should also be given to ways of improving the efficiency and coordination of bilateral and multilateral assistance in delivering forestry programmes, including proposals for cooperation at the national and international levels (a) within and among all relevant multilateral institutions, including United Nations agencies and the World Bank, and (b) between bilateral and multilateral donors.

5. The report was prepared by the United Nations Development Programme (UNDP), as the lead agency for programme element II, in consultation with the secretariat of the Panel in the Division for Sustainable Development, Department for Policy Coordination and Sustainable Development of the United Nations Secretariat.

6. Subsequent reports will benefit from the outcome of an inter-sessional workshop on finance, scheduled for 4-7 June 1996 in South Africa. To be co-sponsored by UNDP and the Governments of Denmark and South Africa, the workshop will give greater attention to mobilizing financial resources, especially innovative financing to finance programmes for sustainable forest management in the developing countries and countries with economies in transition.

I. INVESTMENT IN FORESTRY

7. Finance and technology are considered interrelated components of investment, which is essential for socio-economic development and growth. Investment in forestry cuts across all aspects of sustainable forest management and development. Expenditure on current production is not considered as investment, which may be classified as gross or net investment. Net investment is obtained by deducting disinvestment from gross investment.

8. In the forestry sector, investment covers the cost of the creation, management and conservation of forest resources, and of developing facilities for the production and marketing of forest products and services for many and diverse social, economic and environmental benefits. World wide, the needs and opportunities for investment for forestry are vast.

A. Estimation of current investment in forestry

9. Important activities to be considered in estimating investment in forestry are:

(a) Resource development (reforestation, agroforestry, forest management);

(b) Resource conservation (forest, soil, water, biodiversity);

(c) Facilities for production of goods (wood and non-wood products) and services;

(d) Infrastructure (e.g., improved access, facilities);

(e) Interface activities (forestry interface with agriculture, animal production, fishery, primary health and medicine, tourism, construction and trade;

(f) Research, technology, extension;

(g) Human resources development.

Information on most of these activities does not exist in most developing countries, which seriously hampers the calculation of current levels of investment. Available information is confined to the area of forest land by broad categories, such as natural forests and plantations, and production and

trade in wood and wood products. Estimates based on such information can only suggest the broad outlines of the above-mentioned activities.

1. Gross investment

10. The total area of natural forests in developing countries is estimated at 1.9 billion hectares (ha). Recorded area of forest plantations in 1990 was 68.4 million ha, with an average annual addition of 3.2 million ha. To estimate the annual investment in forestry, it is considered (based on reported figures) that average investment for raising one hectare of forest plantation is $650, and the average annual cost of maintenance and protection per hectare of natural forest is $2. On that basis, the annual investment in forest resource management in developing countries works out to about $6.1 billion.

11. Similarly, it is assumed that average annual change of production of roundwood, sawnwood, wood-based panels and paper (in developing countries) has entailed investment for plants, machinery and infrastructure. Assuming an average investment per unit of additional production capacity of these products as reported in recent studies, the estimated annual investment for harvesting and processing is $7.5 billion.

12. The total estimated annual gross investment for forestry and forest industry in developing countries thus amounts to $13.5 billion. Investment statistics on agroforestry, non-wood forest products and services, infrastructure, institutions and human resources development are completely unavailable. If the estimated investment is increased by another 50 per cent, to account for the missing components, the overall investment would be about $20 billion.

2. Disinvestment

13. Disinvestment, on the other hand, is negative investment resulting from the destruction or depletion of capital stock through capital consumption. Whether planned or unplanned, deforestation that leads to destruction of forest stock is a case of disinvestment. Other forms of disinvestment include depreciation of stocks, equipment, infrastructure etc. Forest disinvestment has happened in the past and continues to happen today, as is evident from the increasing rate of deforestation.

14. According to The Forest Resources Assessment 1990, the annual change of natural forest cover in the developing countries during 1981-1990 was -16.3 million ha, compared to -11.3 million ha during 1971-1980. The estimated average wood volume per hectare is 113 cubic metres (m^3); estimated average biomass per hectare is 169 tons. At $25 per cubic metre of wood (without any value being put on biomass), the annual disinvestment in the forests of developing countries for the estimated rate of deforestation comes to $45 billion.

15. The above amount does not fully represent the real extent of disinvestment: it does not take into account the loss of biodiversity; the degradation of

agricultural lands, watersheds and pastures; the displacement of forest peoples; the depletion of resources of non-wood forest products and services, medicinal plants, and fishery products (particularly in mangroves); and the overall negative impact of deforestation on environmental stability and community welfare. Nor does it take into account the degradation in forest quality caused due to fire, grazing, shifting agriculture, fuelwood collection, overfelling of trees and other forms of injurious interference. Information on change in forest quality is minimal, but indications are that it may represent an even greater disinvestment than deforestation.

16. It is clear that annual gross investment in forests over the past several years has been much lower than the actual disinvestment, resulting in a negative net investment of $25 billion. Correcting the cumulative effects of net disinvestment over the years will require significant efforts.

17. It is interesting to compare the situation of forestry with that of agriculture. The estimate of net investment in on-farm improvement for primary agriculture in developing countries is $26 billion per year between 1987 and 1992, gross investment being $77 billion; the corresponding figures for the post-harvest sector and agro-industries are $16 billion and $40 billion, respectively. In addition to this largely private investment in developing countries, it is also estimated that a net $10 billion per year is involved in publicly funded research and extension, with another net $15 billion per year of public expenditure going to rural infrastructure. These add to a total net investment of $67 billion per year for agriculture in developing countries. The annual gross investment for agriculture in developing countries during the period 1987-1992 was $144 billion, and is expected to rise to $175 billion per year during the period 1993-2013.

B. Investment needs estimates

18. There are several pre-UNCED estimates of investment needs, which were made for different purposes, with different scope and assumptions. In 1985, the World Resources Institute (WRI) report, "Tropical forests: a call for action", presented an estimate of $5.3 billion over the five-year period 1987-1991, or about $1.1 billion per year, for 56 tropical countries. The 1985 estimate of the Food and Agriculture Organization of the United Nations (FAO) for required investment in 53 countries (28 in Africa, 11 in Asia and 14 in Latin America) was $4.6 billion.

19. In 1987, FAO made a further estimate of the annual need for investment for forestry development in developing countries at $13 to $17 billion. Of that amount, 70 to 80 per cent was for forest industry and industrial forestry development. An estimate by the World Wide Fund for Nature (WWF) in 1991 for forestry development, including the development of forest-based industries, gave an annual figure of $18 billion.

20. The annual estimate of financial requirement for sustainable forest management provided in chapter 11 of Agenda 21 2/ for four forestry programme areas was $31.2 billion for the period 1993-2000, not including the cost of

implementing forestry components under other chapters of Agenda 21 and related conventions or the full cost of putting the Forest Principles into effect.

21. In 1995, the International Tropical Timber Organization (ITTO) estimated costs to producer countries of attaining the target of sustainable management of tropical forests by the year 2000 at $2.2 billion per year for priority actions. However, that estimate covered only a limited number of activities: the enforcement of policy, law and regulations; demarcation and maintenance of boundary, improved logging, training, research and public education.

22. All such estimates should be interpreted to represent the magnitude of the net investment required. Based on all new information available, it is possible to make a revised estimate that would include the following assumptions:

(a) Governments will be able to control deforestation, reducing it by half by the year 2000, to reach a minimal level of deforestation by 2010;

(b) Depreciation of forest capital resulting from deforestation and degradation will be made up through investment in resource creation, rehabilitation and improved management;

(c) Incremental demands for forest products will be met by intensive forestry in high-yielding forest plantations/production forests;

(d) Investment in forest industries (new mills, mill replacements and industrial infrastructure) will be made to meet existing and incremental demands;

(e) Adequate investment will be made available for developing support services, market infrastructure, institutional capability, information generation etc.

23. The estimate based on all the new information remains similar to that of Agenda 21, except that $36 billion are added to counter the depreciation resulting from deforestation. The estimates are presented not to generate discussion or debate on these indicative figures but to clarify that, however large they may be, there is a significant gap between requirements and actual net investment.

II. FINANCING FORESTRY DEVELOPMENT

24. Investment can be broadly categorized as domestic and foreign, and it is possible to distinguish public and private sources of finance, as follows:

Type of investment	Domestic	Foreign
Public	Public administration/institutions State-owned enterprises	Development assistance Loans, grants
Private	Individuals, cooperatives Companies, non-governmental organizations	Direct investment Portfolio investment

A. Domestic sources

25. In the long run available resources are defined by a country's resource mobilization capacity, which is determined by its national income and the propensity of both its private and public sectors to save. The balance between domestic and foreign finance for investment is a key and controversial question. Some examples are provided in table 1; it seems to be generally accepted that most financing of investment will come from domestic sources.

26. Mobilizing funds for forestry of the size indicated from domestic sources is a daunting task for developing countries, the success of which depends on the facilitating efforts and policy supports of the Government. Policies and regulations relating to land tenure and forest resource management and utilization are critical. Various arrangements are encountered in this regard, such as:

(a) Forests owned and managed (including harvesting) by the Government, and product processing/marketing fully or partly carried out by the Government;

(b) Forests owned and silviculturally managed by the Government, and harvesting, processing and marketing undertaken by the private sector;

(c) Forests owned by the Government and managed (except for protected areas) by the private sector on lease arrangements, including harvesting, processing and marketing;

(d) Forests owned and managed (including community and customary ownerships) by the private sector, subject to policy regulations of the Government;

(e) Forests privately or customarily owned;

(f) Combinations of two or more of the above.

27. Even in situations in which ownership and management responsibilities reside with the private sector, there is a need for public-sector investment in policy enforcement, infrastructure development, and training and education. Responsibility for socially and environmentally oriented programmes with a low financial rate of return falls on the Government.

Table 1. Variations in funding levels of selected developing countries for forestry, 1991-1994

Country	Per capita GNP of 1990 (US$)	Forest area as per cent of land area	Forest area per capita (ha)	Investment		Investment per hectare of forest (US$)	ODA investment per hectare of forest (US$)	ODA investment per capita (US$)
				Total (thousands of US$)	ODA (thousands of US$)			
Bangladesh a/	210	8	0.01	10 930	8 730	10.90	8.70	0.08
Fiji b/	1 780	47	1.17	9 288	2 235	10.89	2.62	3.08
Gambia d/	340	10	0.11	1 200	888	12.24	9.06	1.04
India b/	360	22	0.08	238 440	68 350	3.67	1.05	0.08
Indonesia c/	560	64	0.64	5 273 465	36 767	45.59	0.32	0.20
Mozambique c/	80	22	1.11	1 200	1 100	0.07	0.06	0.07
Philippines b/	730	27	0.13	34 810	28 698	4.33	3.57	0.46
Senegal c/	710	40	1.04	10 100	8 460	1.32	1.11	1.15
Uganda d/	180	32	0.32	7 000	4 530	1.10	0.71	0.25

a/ 1991 figures.

b/ 1992 figures.

c/ 1993 figures.

d/ 1994 figures.

28. Often, forests are a source of revenue for Governments, and the situation may be reversed when forests are depleted. Forest revenue sources for Governments are of several types:

(a) Sale of forest products: proper pricing based on market value is important. Lower prices lead to revenue loss and cause market distortions, removing the incentives for the private sector to engage in afforestation and forest-management activities.

(b) Collection of royalties, fees, levies, and other charges: this system is common where government forests are leased to private entrepreneurs. The purpose of these charges is to capture the maximum possible rent without affecting the incentive for sustainable management.

(c) Administrative and service charges towards the cost of services rendered by the Government relating to policy enforcement: where forests are owned and managed privately, the cost of government-provided services are recovered in the form of taxes.

29. For various reasons, many countries are unable to raise public funds; programmes that depend on public finances, such as conservation, infrastructure and institutional support, thus tend to be severely underfunded. Public-sector financing alone cannot support sustainable forestry development. The private sector is needed to mobilize the funding required. In Brazil, domestic private enterprises provide 85 per cent of investment in wood-product industries; in Chile, the private-sector share in processing is 95 per cent.

30. Because of the comparatively long-term and high-risk nature of investment, forest-resource development and management in most developing countries does not attract sufficient levels of private investment. On the other hand, the harvesting, processing and marketing of forest products tends to be mostly private, given its higher and quicker payback. Private investment in tree planting or forest resources development is encouraged through incentives, such as tax remissions and subsidies. Management of private natural forests, however, is much less common compared with private forest plantations, due to greater uncertainty and perhaps a lower return on investment. Private-sector investment in eco-tourism may be increasing.

31. For private-sector investment in forestry, sources of funds are varied, and include personal savings, loans, subsidies, cooperative and corporate shares. Investment is influenced by policies and strategies adopted for mobilizing capital, including incentives, credit and marketing facilities and regulations related to products, scales and horizons. Private domestic investments in the forest-based sector include small local enterprises and medium and large national enterprises, including large private corporations. Non-governmental organizations, private voluntary organizations and community-based organizations, though not strictly private institutions, often mobilize funds for investment in activities that support forestry-related environment and local community development, without profit motives.

1. Small investments

32. Small investments in forestry are often local investments, sponsored by or for local people and using local resources. Small entrepreneurs, mainly small farmers, contribute considerably to the mobilization of investment. The main sources of their funds are personal savings, grants, loans and subsidies. Rural-level cooperatives facilitate the pooling of resources and help to build bargaining strength. Several factors affect the extent and efficiency of local private investment, such as access to land, regulations related to tree/forest crops, organized credit facilities, price guarantees for products, institutional support, extension services and adequate incentives. Local investment in forestry takes place in tree growing, economic forest-product harvesting and small-scale processing enterprises.

33. In many developing countries, local investments add up to sizeable amounts through the involvement of large numbers of individuals, families and local organizations. For example, a 1985 survey indicated that the local participatory effort involved in planting 1,200 million seedlings in India in 1984 was equivalent to an investment of $222 million. Small-scale private investment involved in such activities as growing medicinal and oil-yielding plants, rattan cultivation, beekeeping, lac cultivation, mushroom production, wildlife farming and agroforestry is quite large; data on its exact extent is unavailable.

34. In many countries, small-scale operations predominate numerically in forest-based processing; they are entirely privately owned, are labour-intensive, involve little capital input, and use mostly low-cost technology, producing sawnwood, packing cases, matches, tool handles, furniture, bamboo and rattan products, charcoal etc.

35. However, experience in many countries indicates that local producers of forest products are especially vulnerable: many small-scale tree-planting and forest-based processing enterprises fail. The right combination of resource-pricing policies, incentives, credit, technology, research and support to stimulate successful local community investment is a major issue in forestry today. Recent experience shows that if the resources of local populations are mobilized effectively, a great deal of productive and effective forestry investment can take place at a relatively low public cost (see box 1). More information and analysis in this area are needed.

Box 1. Government funding support to small investors in forestry

Specialized government agencies appear to be the most important source of institutional loans for small local entrepreneurs in many countries. Agricultural Finance Corporation of Kenya provides loans for growing fuelwood to individual farmers and farmers' cooperatives at 12 per cent interest. In Colombia, Fondo Forestal provides low-interest guaranteed loans through private commercial banks. In Jamaica, loans are available for farm forestry from the Agricultural Credit Bank. In Brazil, the National Petroleum Council finances the Small and Medium Property Reforestation Programme. In India, the Farm Forestry Programme of the National Bank for Agriculture and Rural Development facilitates loans for farm forestry to individual farmers and farmer organizations.

2. Medium-to-large investments

36. Private investments in medium-to-large enterprises are initiated by industrial firms and private corporations/companies. Funds for large investments are drawn from reinvestable savings, equity shares, stocks, bonds, loans from national and international financing agencies, equipment manufacturers and so on. Medium and large-scale investors are present in many forestry activities: forest plantations, forest harvesting, forest-based processing activities and marketing. Some of the large units are integrated complexes that operate from forest to market-place, such as Jari in the Brazilian Amazon. However, in most countries private investment in forestry generally flows into the processing subsector, using raw material resources created through local investments or available from government forest lands. Larger-scale forest-based industries are characterized by larger capital investment in absolute terms; a higher proportion of capital budget relative to working capital; and a higher relative capital investment per unit of labour and raw material.

37. Private-sector investment in large-scale plantations has been forthcoming, especially if various types of incentives are provided by Governments and specific and financially attractive market opportunities exist. Successful large-scale industrial afforestation/reforestation programmes under private sector have been taken up in many developing countries, such as Argentina, Brazil, Chile, Indonesia, Malaysia, the Philippines, the Republic of Korea, Swaziland, Uruguay, Venezuela and Zimbabwe.

38. Governments also support medium and large private firms investing in forestry industry through investment promotion packages, such as loan guarantee programmes, tax holidays, duty-free importation of equipment/machinery, provision of infrastructure etc. Incentives often include a commitment to supply raw materials from government forests and long-term forest management/harvesting leases.

3. Non-governmental organizations

39. Non-governmental organizations raise funds at the local, national and international levels through multiple sources, such as donations, subscriptions and governmental project support. The influence and presence of non-governmental organizations in forestry is strong in several countries. In Bangladesh for example, there are a number of non-governmental organizations involved in forestry, with development delivery capability and experience in organizing people and working with the rural poor; some of them also have facilities for providing credit, training and marketing services. Collateral-free short-term loans are available through the Grameen Bank to individuals and groups engaged in rural small-scale forestry. Achievements in organizing groups and implementing tree planting as an income-earning activity are impressive, with some 25,000 small groups involved in social forestry. The sericulture programme of the Bangladesh Rural Advancement Committee is specially designed to benefit landless women. Mulberry raising is carried out in homesteads, roadside plantations and agroforestry plots. The programme integrates mulberry growing with silkworm rearing, cocoon production, silk reeling and spinning, thus promoting development rather than subsistence.

B. Foreign sources

40. Least developed countries have not yet reached a level of national income sufficient to yield the domestic savings required to finance investments necessary for further growth. This makes foreign financing necessary, which falls under two categories: foreign assistance and foreign investment.

1. Foreign assistance

41. Foreign financing for forestry in the form of ODA essentially provides resources to support non-commercial activities and technical assistance, and plays a vital role in funding social and environmental costs. Official development finance transferred about $53 billion (net) to developing countries in 1993 (for international development non-governmental organizations and non-official groups providing technical and financial assistance, see section 5).

2. Foreign investment

42. Foreign investment comprises both direct investment and portfolio investment. Foreign direct investment in developing countries by all countries in 1994 amounted to $226 billion, an increase of 9 per cent over the 1993 figure and far exceeding ODA. However, foreign direct investment in 1992 in the whole of Africa (excluding South Africa) was only $1.7 billion, compared with 9.0 billion in China and $1.8 billion in Indonesia. Information on the share of foreign direct investment in forestry is not available. Foreign private investment takes place mostly through transnational corporations (TNCs), and may complement ODA.

43. The presence of TNCs in the forest-based sector has grown both in the number of developing countries covered and the number of TNCs involved. TNCs from some 30 countries operate in the forest-based sector of developing countries of Africa, Asia, and Latin America. In Africa, foreign-owned and controlled operations account for over 60 per cent of total investment in the sector. Until about 1970, the forest-based activities of TNCs primarily operated through wholly-owned subsidiaries, mostly involved in log production and trade. During the 1970s and early 1980s, TNCs were required in many countries to: (a) increase investment in the local processing of timber, and (b) accept local equity participation in forest-based ventures. "Straight" foreign investment is being replaced in favour of joint ventures.

Box 2. Inadequacies of investment information

Full information on investment and other expenditures in the forestry and forest industry sector is generally not available. Coverage varies from country to country, often depending on the agency providing the information. In most cases, information only covers government allocation to its forestry agency/department. Some countries do provide information on external assistance; most do not divide funding into capital investment and current operating expenditure. Only in rare cases is it possible to obtain information on the private sector, whether foreign or domestic.

44. This is due, in part, to a gradual growth in the ability of host country investors to mobilize capital. The present state of engineering and heavy industries in developing countries means that much of the equipment needed for expanding domestic capacity will have to be imported. Pressure on meagre foreign-exchange reserves can be alleviated by TNCs, which can progressively provide technology to increase local sourcing of inputs, including some equipment.

45. A recent development in international private financing in forestry is the interest of entrepreneurs in the creation and sustainable management of forest resources. An example is Precious Woods Ltd., founded in 1990 by investors for the reforestation of fallow lands, sustainable management of existing natural forests, and sustainable production of tropical timber through reforestation and harvesting. Precious Woods Ltd. is investing about $40 million in Costa Rica for raising plantations of teak and other valuable species and conserving the rain forests of the country; the number of similar schemes is increasing.

C. Constraints in financing for forestry

46. Financing for forestry is complex because of its environmental, economic and social rôles and externalities. Long return periods and externalities (including non-use values) make it different from many other sectors in terms of financing needs. Financing forestry development in the developing countries is constrained by several factors. Some are generic to most sectors of the economy, such as poverty, lack of funds and credit facilities, poor

institutional capability, inappropriate development policies, inadequate infrastructure, inadequate people's participation, lack of private sector involvement, low labour productivity, inadequacies of technology, a lack of information and databases, deficiencies of land tenure systems and a lack of intersectoral coordination. Some constraints also have an international dimension, such as current practices in most ODA financing. Trade restrictions or barriers are another important issue: European consumption of tropical wood products decreased by 26 per cent between 1981 and 1992.

47. Constraints specific to or of high severity for forestry include: low priority, slowness of policy reforms, uncompensated land transfers and accounting distortions. Forestry is perceived by many as a marginal activity. Only the value of wood (timber and fuelwood) is considered in comparing the value of forest land against its possible agricultural output. Forestry is often misinterpreted as wood production; it is important to establish awareness of the many other roles of trees and forests in increasing food security; reducing environmental degradation; providing rural energy and employment; mitigating climatic changes; maintaining the integrity of watersheds; and providing medicines.

48. As a result of the low priority assigned to it, policy reforms in the forestry sector have been slow, often lagging behind the reforms of national macro-policies. In many countries, forest policies lack transparency and a progressive people-centred approach, and forestry is accorded a secondary status, forming part of a large government department or ministry, such as a ministry of food, agriculture, natural resources or primary industry. The low priority assigned to forestry in national development plans results in low budget allocations in comparison to needs, and is reflected in lack of technical capability, human resources, extension facilities, basic data/information, and administrative efficiency. This in turn deters entrepreneurial investment in forestry.

49. Divestment of forest capital and land transfers support development in other sectors, such as mining, tourism, agriculture, and hydropower. Such land transfers are made easier due to the extreme undervaluation of forest lands.

50. In national accounts, there are several distortions relating to forestry. Apart from the land transfers mentioned above, the value of a number of forest benefits, such as medicinal plants and other non-wood forest products and forest grazing, are not reported at all or are included in the accounts of other sectors. Forest foods, grazing and fodder are often reported under agriculture.

51. The total value of forest benefits should be reflected in an integrated manner in the system of national accounts. National accounts should consider wood products, non-wood forest products and forest influences/intangible benefits as components of an integrated whole. Together with valuation of forest resources stock, these would provide a more realistic and meaningful representation of the value of the forests.

52. The total value of the formally recorded production of wood-based forest products in the world in 1993 was $391 billion, of which the share of developing countries was $144 billion. If the value of all forest benefits were included,

the value of forest benefits accrued to developing countries would be nearly three times as much, increasing the currently recorded contribution of forestry to gross domestic product (GDP) from 3 to about 10 per cent or more. The case of India illustrates the situation: its officially accounted contribution of forestry to national income is only $2.9 billion, against the actual contribution of benefits valued at 43.8 billion (see box 3).

Box 3. Real value of forests: the case of India

The magnitude of underestimation and underreporting of forest benefits is great, and India provides one of the best databases for its estimation.

	Billions of United States dollars
Forest grazing: some 270 million cattle graze in forests. Minimal value of $36 per year for providing alternate source per animal	9.7
Green fodder: average annual collection of 400 million tons. Value estimated at $5 per ton	2.0
Medicinal plants: nearly 70 percent of the population use indigenous herbal medicine as a means of primary health, the bulk of it originating in forests. Value estimated at $10 per person	6.3
Non-wood construction materials (thatching materials, bamboo, grass, fibres etc.): assumed that 250 million people living below the poverty line use non-wood construction materials from forests, valued at $10 per year	2.5
Food: 67.8 million tribal people who depend on forests for their livelihood. A food value of $100 per year for food derived from forest is assumed	6.8
Wood products, fuelwood and charcoal estimate	16.5
Total	43.8

This estimation does not consider the values of many minor products, nor does it consider the value of biodiversity conservation, wildlife and nature tourism, watershed protection or the sequestration of carbon.

III. ACQUISITION OF TECHNOLOGY

53. Technology covers the physical, human and organizational capacities, and includes hardware and knowledge. From a development perspective, appropriate deployment of technology is essential. Technology influences the investment need, depending on whether it is capital intensive (labour saving) or labour intensive. There is an unprecedented accumulation of technological capability in the world today. Much of it, however, remains unrecognized, underutilized and inadequately shared.

54. Financial assistance and technology transfer are interrelated components of international development cooperation. Technology transfer is a form of resource flow and can normally be achieved without any large-scale expansion of financial transfers. Technology transfer aims to bridge three major types of gaps: (a) between innovation and commercialization, (b) between technologies in use in developed and developing countries, and (c) among technologies available to different developing countries.

55. No single technology or set of technologies can be appropriate in all countries: optimizing technology for the great variety and combination of situations is challenging. Technologies cover different ecological zones, socio-economic needs and pressures, and environmental considerations. They also cover a large number of activity groups, such as forest-resource development, reforestation, sustainable harvesting, processing and value addition, integrated waste management, product development and marketing, and promoting interface activities. Considering the decrease of area under forest cover and the increase of demand placed on it, technological innovations will be a driving force for sustainable forest management. The transfer and exchange of technology has increasingly been facilitated by developments in information technology.

56. The transfer of technology from developed to developing countries takes effect in different ways; private entrepreneurs, bilateral and multilateral assistance agencies, institutions of the Consultative Group on International Agricultural Research (CGIAR) and regional research institutions, non-governmental organizations and foundations are all involved. Foreign investment in developing countries is often associated with a technology package, including management and marketing contracts, foreign equipment and patented technology, examples of which can be seen in the forest-based industries of several developing countries.

57. Bilateral and multilateral forestry projects are a common means of achieving technology transfer. There are many national and regional forest research institutes that have long received international assistance. FAO technical publications provide updated technical information on almost all aspects of forestry, such as mangrove forest management guidelines, biotechnology in forest treat improvement, a model code of forest harvesting practice and non-wood forest products for income generation and sustainable forestry.

58. The People and Plants Initiative (jointly backed by WWF and RBG Kew) of the United Nations Educational, Scientific and Cultural Organization (UNESCO), the database of the United Nations Environment Programme (UNEP) on environmentally sound technologies, the Zero Emissions Research Initiative of the United Nations University (UNU), the Medicinal Plants Programme of the World Health Organization (WHO), and the programme of the United Nations International Development Organization (UNIDO) on industrial processing and marketing are some of the many examples of multilateral technology transfer.

A. Technical cooperation among developing countries

59. Apart from North-South technical cooperation, TCDC is becoming an effective medium of South-South technology transfer. Sharing of experience by developing countries can happen through direct exchange or through formal and informal networks; the Latin American Dendroenergy Network, the African Forest Action Network and the Asian Network on Medicinal and Aromatic Plants are some of the many active ones. UNDP and other United Nations bodies operate technical cooperation among developing countries (TCDC) programmes that could be applied more directly in technology transfer for forestry. TCCT needs stronger support and development.

60. Developing countries will only be able to advance rapidly to state-of-the-art technologies, avoiding mistakes and delays, if their capability level is adequate. In most cases, the experience and technologies of developed countries do not automatically translate into lessons and tools for developing countries; each country will proceed along a path suited to its own unique circumstances and influenced by a multitude of factors.

B. Research

61. While all CGIAR institutions have some forestry-related activities, the Centre for International Forestry Research and the International Centre for Research in Agroforestry are directly concerned with forestry and conduct programmes on policy development; the management and conservation of natural forests; the reforestation of degraded lands; products and markets; the environmental and economic characterization of land-use systems and the validation of technologies and issues related to their adoption; multipurpose tree improvement; and component interaction between trees and crops. There are also regional centres/institutions engaged in research and technology transfer on specific aspects of forestry within their respective regions, such as the International Centre for Integrated Mountain Development, the Inter-American Institute for Cooperation on Agriculture, the Tropical Agriculture Research and Training Centre, the Institute of Forest Management of the Association of South-East Asian Nations (ASEAN) and the ASEAN Timber Technology Centre.

62. Activities related to forestry research in developing countries and technology transfer are found in some developed countries institutions, including the Canadian International Development Research Centre, the East-West Centre, the Natural Resources Institute of the United Kingdom of Great Britain and Northern Ireland, RPG Kew, the International Cooperation Centre of Agricultural Research for Development of France, the New York Botanical Gardens, the Australian Centre for International Agricultural Research, the French Institute for Scientific Research and Development Cooperation, the Division of Forestry of the Commonwealth Scientific and Industrial Research Organization, the Forestry Service of the United States Department of Agriculture, and the Tropenbos Foundation. Globally, ODA for forestry research amounts to about 5 per cent of total ODA to the sector, the corresponding figure for agriculture being 10 per cent. A number of international non-governmental organizations and foundations support research and technology transfer.

63. Investment in forestry research in most developing countries has traditionally been low, resulting in a smaller number of forest scientists compared with those engaged in agricultural research, as well as a lower level of training and inadequacy of infrastructure and facilities. The measure of forestry research expenditure for developing countries as an average percentage of the recorded value of forest products ranges from 0.05 to 0.1 per cent, compared with about 0.5 per cent for agriculture. Research efforts are far from sufficient, and the lack of consultation with the users of research results and neglect of the subsistence sector lead to continued unsustainable practices; in most cases, there is hardly any participation of the private sector. The so-called technology triangle of academia, business and government is essential for developing and expanding a country's national technological capability. Finally, the area of indigenous technologies in developing countries is only beginning to be explored.

IV. DEVELOPMENT ASSISTANCE

64. The Forest Principles emphasize the need for international cooperation and technical and financial support for the management, conservation and sustainable development of forests. International financing on concessional terms is required for supporting capacity-building, technology improvement, infrastructure development and conservation, and to internalize global externalities.

65. The estimate of the annual need for concessional financing for implementing chapter 11 of Agenda 21, "Combating deforestation" during 1993-2000 is $5,670 million (not including forestry components of other chapters, particularly chapters 12, "Managing fragile ecosystems: combating desertification and drought" and 13, "Managing fragile ecosystems: sustainable mountain development").

66. ODA for forestry is a relatively new phenomenon, having started in the early 1960s; it has grown to $1,545 million for 1993. Dependence on foreign funds in developing countries varies widely: the share of ODA in the total government resources for forestry was about 10 per cent for Indonesia and Malaysia, whereas it was over 80 per cent for Bangladesh and the Philippines (see table 1).

A. Bilateral assistance

67. In 1993, total revenue flows to developing countries from countries that are members of the Organisation for Economic Cooperation and Development (OECD) amounted to $160 billion, of which development cooperation flows accounted for $55 billion. Bilateral aid for forestry in the same year was $916 million, only 1.7 per cent of the total (see table 4); this would seem to reflect a very low priority.

68. There are some 20 donor countries providing bilateral assistance for forestry. Bilateral assistance funds are mainly channelled through special assistance agencies in the donor countries. Donor countries also contribute to

multilateral and non-governmental organization programmes (see paras. 71-82 below). It is important to note that some 80 per cent of all development assistance derives from six of the G-7 countries (the United States of America, Germany, Japan, France, the United Kingdom of Great Britain and Northern Ireland and Canada), whether it is channelled in bilateral or multilateral form. Clearly, changes in aid-fund resource availability in these countries affects the multilateral and other international agencies.

69. Bilateral donors have their own priorities and preferences for recipient countries and programme focus, and some even have a regional focus. Donor interest is sometimes confined to specific aspects of forestry. Some aid appears to be linked to equipment from donor countries, but most is not. Forestry-related donor policies are also influenced by several new trends: the growth and increased strength of non-governmental organizations; the increasing globalization of forestry issues; increased awareness of social and environmental issues; and the rapid economic growth occurring in some developing countries. In view of the differences in the priorities and preferences of donors, the coordination of development assistance at the country and global levels continues to be essential to ensure complementarity of assistance action.

70. Since 1992, there has been a decline in aid flows. Several countries have either revised their aid commitments or frozen aid at its current nominal levels. The reasons attributed for the change are recession and structural unemployment in OECD countries; increased social needs in many donor countries; rapidly increased peace-keeping commitments; and disillusion with what can be accomplished through development cooperation.

B. Multilateral assistance

71. Multilateral organizations can be grouped as development banks, United Nations and other international organizations, international non-governmental organizations, regional organizations and CGIAR institutions.

1. Multilateral development banks

72. The World Bank, the African Development Bank (ADB), the Asian Development Bank (AsDB), the Inter-American Development Bank (IDB) and the International Fund for Agricultural Development (IFAD) are the main multilateral development banks involved with forests. The first four have been directly involved in financing forestry projects; the involvement of IFAD has been indirect, through agricultural projects incorporating tree planting. Increasingly, sustainable forest management is featuring in the policy documents of these banks, as well as in loan and grant agreements.

73. Among the multilateral development banks, the World Bank is by far the single largest funding source for forestry: total World Bank lending of $115 million during 1967-1976 had increased to $1.8 billion for the 1977-1986 period. During 1993, World Bank forestry lending was $276 million. There are currently 25 active forestry projects funded by the World Bank, spread over 20 countries. The World Bank is also, along with UNDP and UNEP, a managing partner

of the Global Environment Facility (GEF), which funds forest-related projects through its focal areas.

74. Since 1978, ADB has funded 14 projects for a total of $337 million; since 1977, AsDB total lending for forestry has amounted to $840 million; IDB forestry lending has risen to $65.3 million since 1993. The lending profile of these banks is similar: currently, no funding is provided for forest harvesting or forest-based processing industries.

2. International organizations

75. Technical support for forestry in developing countries is provided by a number of United Nations and other intergovernmental bodies including FAO, the International Labour Organizations (ILO), the International Trade Centre/World Trade Organizations, ITTO, UNDP, UNEP, UNESCO, UNIDO, the World Food Programme (WFP) and WHO.

76. UNDP provides financial/technical assistance, particularly through country programme allocations. In 1993, UNDP provided $33.5 million world wide for forestry. These funds are designed to promote multisectoral and programme-wide approaches to forest management. The UNDP-administered component of GEF funding, in its pilot phase (1992-1994) included approximately $80 million for biodiversity projects, of which $60 million were for forest-related projects, mostly in Asia and Africa, with significant but smaller programmes in Latin America and the Caribbean, the Arab States and Eastern Europe. A smaller number of forest-related climate change mitigation projects were also undertaken.

77. In 1993, UNDP launched its Forestry Capacity Programme, which provides central funding to countries who best meet programme criteria. Relying on building national capacity, programmes support participation, an integrated cross-sectoral approach and donor coordination for more effectively managed national forest programmes. The pilot programmes, funded by donors at $4 million, have demonstrated the potential of the approach.

78. WFP is involved in watershed management, social/village forestry, fuelwood plantations, land rehabilitation, sand dune stabilization and shelter belts. The WFP contribution to forestry-related activities in developing countries amounted to $121 million in 1993. WFP emphasis appears to be shifting from development through food-for-work programmes to emergency assistance. Since 1993, WFP has approved only $37.2 million in assistance for forestry projects.

79. Internationally, FAO is the principal specialized agency in forestry and is active in many areas. Its normative activities are funded from regular budget allocations. It also implements field projects financed by UNDP, multilateral development banks and bilateral donors as well as by its own Technical Cooperation Programme. The FAO annual regular programme budget for forestry has been about $13 million; for the forestry field programme, it is about $55 million.

80. ITTO has an annual administrative budget of $4 million and is currently mounting country projects at a cost of approximately $15 million. Between 1990

and 1995, ITTO approved grants of a total value of $88.3 million for projects related to trade, forest products, forest management and reforestation.

81. UNEP has been closely involved with activities relating to biodiversity and desertification control, particularly the development of conventions. The UNESCO Man and the Biosphere programme, People and Plants programme and Botany 2000 initiative, as well as a number of its scientific activities, are relevant to forestry. UNIDO is involved in promoting and developing technologies for secondary wood products and phytochemicals/ phytopharmaceuticals.

3. Non-official assistance agencies

82. A number of other organizations support countries in taking effective action for forestry development, including international non-governmental organizations, regional organizations, and CGIAR institutions. International non-governmental organizations involved in forestry differ widely in their scope and interest; the International Union for the Conservation of Nature, WWF, the International Union of Forestry Research Organizations, the International Institute for Environment and Development, the World Resources Institute, the International Technical Tropical Timber Association, CARE International, OXFAM, Conservation International, AT International, the Brothers of the Christian Schools, the Global Forest Policy Project and the World Watch Institute are among those actively involved. IUCN operates on a total budget of some $48 million annually focused on conservation. Many non-governmental organization programmes are financially supported by bilateral and multilateral agencies.

C. Trends since the United Nations Conference on Environment and Development

83. Although the United Nations Conference on Environment and Development (UNCED) established a case for increased support for forestry, overall ODA has actually declined. Panayotou (1995) notes that the chances of raising ODA are minimal in view of the political difficulties of donor countries in maintaining even current levels of ODA. In addition, the outflow of resources from the South for servicing foreign debt far exceeds the inflow of resources from development assistance. The recent trend of decline in ODA is therefore of grave concern. ODA to agriculture fell from $14.0 billion in 1991 to $4.8 billion in 1993.

84. The total ODA to forestry showed a large increase in the 1980s and then a small increase from $1.4 billion in 1990 to $1.5 billion in 1993 (see table 2). ODA in 1993 was comprised of 71 per cent grants and 29 per cent loans. When this ODA level is compared with the need estimated in Agenda 21 ($5.67 billion) it amounts to only 27 per cent of that figure.

Table 2. Official development assistance for forestry, 1986-1993

(Millions of United States dollars)

Categories of donors	1986	1988	1990	1993
Bilateral aid	434.5	723.0	937.3	915.7
Development banks	142.5	200.3	253.7	420.3
United Nations organizations	188.0	191.6	234.3	208.5
Total	765.0	1 114.9	1 425.3	1 544.5

85. The forestry funding provided by all United Nations organizations in 1993 totalled $208 million, of which $121 million came from WFP. Other intergovernmental bodies, including FAO, UNDP, ITTO and UNEP, provided a total of $87 million, or only 5.7 per cent of total ODA for forestry.

86. Under bilateral cooperation, European Union countries gave nearly 40 per cent of total ODA (54 per cent of total aid in the form of grants). Globally, bilateral cooperation represents 59 per cent of total aid (80 per cent of total aid in the form of grants). It should be noted that part of this is in the form of trust funds for international agencies, particularly FAO.

1. Official development assistance by geographic region

87. Table 3 describes ODA for forestry, by geographic region. Asia and the Pacific remains the principal beneficiary (37.2 per cent), followed by Africa (30.6 per cent). More information is needed on which countries receive what level of international cooperation, and whether that distribution is rational and effective.

Table 3. Share in official development assistance, by region, 1993

(Millions of United States dollars/percentage)

Region	Bilateral		Development banks		Multilateral organizations		Total	
Africa	323.6	35.3	58.0	13.8	82.4	39.5	472.0	30.6
Asia/Pacific	261.4	28.5	248.0	59.0	68.0	32.6	574.3	37.2
Latin America/Caribbean	208.4	22.8	84.5	20.1	19.8	9.5	315.7	20.4
Near East and North Africa	36.9	4.0	18.9	4.5	20.6	9.9	77.5	5.0
CIS a/ and Eastern Europe	10.0	1.1	10.9	2.6	1.7	0.8	21.9	1.4
Global	75.4	8.3	0	0	16.0	7.7	83.1	5.4
Total	915.7	100	420.3	100	208.5	100	1 544.5	100

a/ Commonwealth of Independent States.

88. Funding of all the multilateral organizations are now at zero growth or declining, and prospects for new and additional funds appear to be weak. In any case, the ODA growth rate experienced during the period 1986 to 1990/1991 can hardly be expected to recur.

2. Donor priorities

89. In a 1994 FAO survey, donors were asked to indicate the degree of priority (very high, high, medium and low) that they would give to each of 25 proposed areas. Based on donors' response, the priorities are as follows:

(a) Very high priority: country capacity-building; the management of natural forests and social forestry; forestry research;

(b) High priority: country capacity for policy and planning: agroforestry, watershed management and land-use management;

(c) Medium priority: desertification control; extension; national parks and the conservation of genetic resources; forestry legislation; non-wood forest products; forest protection;

(d) Low priority: wildlife management; fire protection; industrial plantations; industries; trade; the marketing of forest products.

D. Shortcomings of the official development assistance system

90. Past evaluations of ODA projects/programmes have identified several shortcomings, which are essentially institutional in nature and, therefore remediable, as follows:

(a) There are a large number of donors providing ODA, which have differing policies, priorities, eligibility criteria, modalities and rules. Conflicts of various nature arise because of such differences among providers of ODA within each group (bilateral, multilateral, non-governmental organization), among these groups and between donor groups and recipients;

(b) When donors have the same preference for countries and similar priorities, they often compete among themselves, thus diluting the effectiveness of assistance. Cooperative management and co-financing of projects/programmes does not occur often enough;

(c) Because of the country preferences of bilateral donors, ODA does not get evenly distributed among countries according to their needs;

(d) ODA projects are often decided on an ad hoc basis without any analysis of their linkages and relevance to overall goals of development;

(e) The policies and priorities of donors and recipients often conflict. As a result, some of the high priority needs of developing countries remain unattended and national programmes are patchy rather than comprehensive;

(f) It is very difficult for recipients or anyone else to be well informed on the multiplicity of changing programmes, funds, criteria and procedures that exist. They lack adequate knowledge and capacity to receive access and implement ODA;

(g) Projects are often prepared without sufficient national/local involvement, resulting in the introduction of inappropriate technology and dependence on foreign experts;

(h) There has been a proliferation of frameworks for environmentally sustainable development planning, causing confusion and dissipation of efforts;

(i) The ratio of local funding to ODA funding in projects is small, raising questions about the capacity of recipient countries to maintain investments once external assistance comes to an end;

(j) There is often insufficient national ownership and commitment, resulting in a lack of positive impact and a lack of adequate technical skills and capability to absorb the benefits of assistance.

91. Overall, ODA is observed as being rarely adequate and predictable: its preparatory procedures are often elaborate and time-consuming, and conditionalities have blocked, delayed or interrupted development assistance.

E. Improved mechanisms

92. Considering the crucial importance of ODA, such constraints need to be removed effectively and immediately through simple and innovative procedures. In order to improve its effectiveness, ODA planning for forestry should be undertaken as a joint/collaborative effort of donors and recipients.

93. At the global level, it is necessary to resolve the conflicts among donors and among technical assistance agencies and to arrive at a common strategy and coordinated approach in setting priorities, country preferences, funding levels and mechanisms, including the integration of diverse frameworks. Where more donors are interested in the same country and programme area, cofinancing activities can help to coordinate ODA delivery: cofinancing multiplies each donor's impact, and cofinanciers may have complementary skills and expertise that they can use in a joint fashion.

94. The international community has realized that coordination and cooperation in the identification of needs and opportunities for investment and technical assistance are just as critical, if not more so, as cooperation and coordination in the financing of such needs and opportunities once they are identified. This recognition was indeed one of the major forces that led to the establishment of the Tropical Forests Actions Programme in 1985.

95. At the national level, all ODA activities related to sustainable forest management need to be coordinated and effectively incorporated into the overall forestry programme of each country; countries should designate an appropriate agency to undertake this responsibility; for example, in Indonesia the National

Development Planning Board undertakes coordination through the Consultative Group on Indonesian Forestry.

96. It is generally recognized that project lending and project-oriented investment often do not result in balanced growth of the forestry sector, due to overlaps, conflicts, duplication of efforts and inefficiency in the use of resources. The World Bank and other multilateral development banks are accordingly advocating a broad sectoral approach to investment lending. A sector investment programme is to be based on a sector strategy and policy framework, and it should cover all sector expenditures, current and capital, and involve all stakeholders. This would help to avoid shifting priorities and increase the focus on policy dialogue between donor and host countries so as to ensure that there is mutual understanding of objectives and clear agreement on strategies and conditions of performance for loans or grants; it would also improve inter-agency cooperation and coordination.

97. This approach calls for high planning capability and continuity of programme funding and is consistent with recent UNDP emphasis on a programme approach. General Assembly resolutions on United Nations resident coordinators and country strategy notes may also provide a framework and mechanism for initiating such programmes.

98. Based on the principles of sectoral approach developed by the World Bank and others, UNDP has developed a concept of forest partnership agreements (FPAs) between country and donor communities so that national commitments and donor support for implementing forestry principles and procedures specified in Agenda 21 can coalesce. Establishment of a special forest partnership facility in FPA countries is also envisaged. FPAs can help to establish large financing packages based on multi-donor sectoral funding. They would focus on countries with a strong national commitment to bring deforestation under control, and would also focus beyond the forest sector on the underlying causes of deforestation.

V. INNOVATIONS IN FUND MOBILIZATION

99. In recent years, a number of innovations have been introduced for mobilizing funds for forestry, some more successful than others. Some new mechanisms are still in their early stages, and others are still at a conceptual stage. Such innovations can be considered under two broad headings, external and domestic.

A. External resource flows

100. Foreign investment and ODA, including such arrangements as cofinancing, matching grants and GEF, have been discussed above. Global environmental values of forests offer possibilities for debt swapping and other means of trading through international transactions. Several innovative and interesting ideas for the international acquisition of funds for forestry have recently been raised, and some are being tried with encouraging results, such as debt-for-nature or debt-for-sustaining-forests swaps, carbon offsets, internationally

tradeable emission permits, tradeable development rights, biodiversity patents and matching funds for sectoral reforms.

101. Debt-for-nature swaps were an early innovative financial mechanism. Begun in 1987, they continued after UNCED and by December 1992 had generated approximately $76 million for conservation in developing countries. These small-scale transactions need to be greatly expanded to attract the serious attention of finance ministers. In such arrangements, international debts can be purchased or swapped in return for environmental safeguards, such as establishing nature reserves, or, as suggested recently, in return for guarantees of sustainable management of forest resources. In order to promote policy reforms in forestry, the concept can be widened to include debt-for-policy reform swaps, or even possibly to debt-for-sustainable-development swaps.

102. Carbon offsets are arrangements by which, for example, a developed country power utility finances reduced-impact logging, enrichment planting, forest protection or reforestation in a developing country in order to sequester carbon and offset emissions. Several such pilot offsets have been initiated in recent years.

103. Internationally tradeable emission (carbon dioxide) permits could be used to finance the protection of forests. Such a mechanism could allocate a certain level of allowable emissions in the form of tradeable permits or obligations, based on some internationally acceptable formula. If countries exceed the limits, they can purchase or trade emission permits with countries that have an excess supply of permits. The concept raises questions of equity and sovereignty.

104. Tradeable Development Rights (TDRs) are comparable in conception to tradeable emission rights, and could be used to conserve biodiversity both within a country and globally. Developing countries could set aside habitats for biodiversity conservation, dividing them into a number of TDRs. The TDRs could be sold to firms, foundations, developed country Governments, universities and research institutions. Some would buy it for direct use (prospecting for biochemicals) and others to save them from commercial exploitation. Developed countries could stimulate demand for these by providing credits to domestic firms and property owners for the acquisition of TDRs.

105. Additionally, at the international level, commercial private-sector efforts to follow up UNCED are promoted by such groups as the International Network for Environmental Management in Germany and the Business Council for Sustainable Development (BCSD) in Switzerland. BCSD has established task forces on, inter alia, internalizing social and environmental costs in prices, and conducting a global study on the environmentally sound production and use of paper.

B. Domestic resource flows

106. Domestic resource falls under two categories: government resources and private resources.

1. Government resources

107. Apart from royalties charges, a large number of innovative measures can be and are being applied to improve domestic resource flows for forestry (see also paras. 25-39), such as:

(a) Objective-oriented taxation: specific charges can be imposed on forest products for such purposes as afforestation, forestry education and training and forestry research;

(b) Attributable reimbursements: other sectors/activities may be required to pay for the benefits derived. For example, Colombia has planned to divert income from coffee price-support payments by the European Union to sustainable forest management;

(c) Beneficiary taxes and payments: taxes for the enjoyment of non-marketed benefits, such as tax to be paid by downstream beneficiaries of upland conservation. These are in fact payment for services. This type of arrangement has been used in Japan for many years, and Colombia has a law that requires a percentage of revenues from hydropower sales to go into a fund that supports upland watershed management and conservation activities. Similar approaches exist in a number of other countries;

(d) Watershed charges: these payments for damages inflicted can be imposed on loggers and others who damage upland ecosystems;

(e) Licence fees/charges on non-damaging uses: fees or user charges on permits for ecotourism/scientific tourism and bioprospecting;

(f) Reduction/removal of environmentally damaging subsidies: for example, removing subsidies for activities leading to (or encouraging) deforestation, such as agriculture, mining, irrigation, hydropower;

(g) Full-cost pricing: several forest products and services are supplied to users at below cost, such as fuelwood, water supplies;

(h) Increased rent capture: more information on this has been given above;

(i) Fines on wasteful use and wilful damage to forests: this provision can be seen in many forest utilization contracts and may be enforced through deposit of bonds;

(j) Deforestation charges/taxes: similar to item (i) above and often linked to the afforestation cost involved.

2. Private resources

108. A number of successful cases of innovations to mobilize private resources have been described above. People's participation of a different nature (single tier or multi-tiered; individual initiatives or cooperative action) and private-

sector involvement can considerably improve the flow of funds. Increased non-governmental organization involvement can be facilitated by the establishment of offices or "windows" within existing organizations that would accept proposals for projects from the non-governmental organization community. Industries using forest products can be encouraged to participate in developing forest resources; for example, tobacco and tea manufacturing industries could participate in developing fuelwood plantations. Targeted approaches, such as joint forest management (JFM) in India and extractive reserves in Brazil, have produced encouraging results. Under JFM, government forest departments and local communities have successfully entered into forest management agreements that benefit both parties.

109. A newly suggested mechanism is tradeable reforestation credits, which aims to provide an incentive for private landowners to encourage them to keep their land under forest cover or reforest it. Landowners who keep their land under forestry receive a tax credit against their general tax obligations, and smallholders who do not pay taxes can sell their credits to wealthier people who do. Costa Rica has been using this instrument, integrating it with carbon offsets.

C. Institutions to support targeted financing for forestry

110. The innovative mechanisms discussed above have conceptual strength. However, their success depends on strong and innovative institutions that can implement and enforce the mechanisms. Current institutions, both nationally and internationally, will need substantial strengthening and reform to implement such innovative mechanisms.

111. At the national level, the establishment of a national forestry development fund (national forestry fund) with decentralized funding structures could support forest conservation through the reinvestment of forestry income into forest resource development. It could also help to meet private-sector environmental financing needs. A centrally managed fund could incorporate several of the above-mentioned mechanisms and serve as an effective agent for fund mobilization. It would help the implementation of sector investment programmes for forestry and could effectively handle any forest partnership facility that might be established on the basis of forest partnership agreements. This would in turn help to strengthen alliances of public institutions, donors and financing agencies, Governments and the global community. Such a fund could be structured along similar lines to those of some of the agricultural financing institutions, such as agricultural banks and agricultural finance corporations, that already exist in several countries, or it could be an affiliate of such existing financing institutions with a special window for forestry.

112. The advantages and improved effectiveness of global level funding mechanisms for forests is a central issue for the consideration of the Panel. Proper consideration will require careful analysis and broad understanding of the strengths and shortcomings of the present funding system.

VI. CONCLUSIONS AND OPTIONS FOR FURTHER CONSIDERATION BY THE PANEL

113. In spite of the commitment of countries and the international community to pursue Agenda 21 and the Forest Principles, real investment for sustainable forestry development remains negative. The net annual forestry investment of US$ 31.25 billion for the period 1993-2000 that was envisaged by UNCED, with a component of US$ 5.67 billion of concessional financing, is far from being realized. Increased funding and improved technology are the twin engines needed to propel a take-off towards sustainable forestry. But fund mobilization is generally weak in developing countries: public resources are the mainstay for forestry development in most cases, and available resources and capability are far from adequate. In circumstances of inadequate resources for forestry, an early casualty has been budget allocations for research and technology development.

114. Foreign investment and ODA are important for many countries, particularly in Africa. The current level of ODA in forestry is only 27.2 per cent of the amount specified in Agenda 21; moreover, in the present-day economic climate, increase in ODA is unlikely.

115. The forestry sector today is riddled with problems and constraints that call for action on multiple fronts, and the resources needed are having to be mobilized by the countries themselves; the ODA role can only be catalytic. There is a need to promote the involvement of the people and the private sector. All means of mobilizing financial resources need to be fully tapped. Traditional measures of revenue generation and allocation, or funding based on timber production alone, are no longer appropriate. Innovative measures are required for generating funds based on the immense externalities and environmental benefits of forests, requiring effective and sophisticated mechanisms. In addition, a strong development partnership is called for among government institutions, private establishments, assistance agencies, research institutions and non-governmental organizations, and indications suggest the need for a sectoral approach to forestry development, supported by appropriate policies, strategies and regulatory mechanisms. The improvement and development of technology needs to be assigned its due importance, and wherever technology is acquired, there will be a need to adapt it to the specific situations in the country.

Options for further action

116. The Panel may wish to consider the following options to advance the agenda on finance and technology transfer:

(a) In view of the inadequacy of information on investment in forestry, the Panel may wish to urge its member countries to support activities to update and gather more information, especially information on current domestic investment in forestry. The Panel may also wish to provide guidance on institutional arrangements, procedures and mechanisms for the coordination of data collection, analysis and dissemination;

(b) Since there has already been a current shortfall in financing forestry programmes and it is unlikely that ODA contribution will increase substantially from its current rate, the Panel may wish to provide guidance on measures to sustain ODA contributions to forestry;

(c) Since forestry projects, including sustainable forest management, are not separately covered under GEF, the Panel may wish to consider the case for forestry projects that are specifically related to sustainable forest management and have direct implications for the global environment to be fully covered under GEF;

(d) There is a tendency among donors and lending institutions to give a higher priority to projects on conservation and protection, and a lower priority to projects on industry and marketing. Since successful forest management is closely related to the ability to generate revenues and add more value to forest products and services, the Panel may wish to urge donor countries and lending institutions to review their policies on fundings to take into account the need to give equal importance to forest industry and trade as a strategy for achieving sustainable forest management in the developing countries;

(e) In view of the need to increase effectiveness in coordinating project funding among donors, the Panel may wish to give its view on the approach taken jointly by UNDP and the World Bank of involving both donors and recipient countries as partners in planning ODA for forestry. Such partnership agreements between donors and recipient countries could help to establish large financing packages based on multi-donor sectoral funding;

(f) Strong and dynamic institutions are required to drive efforts to achieve fund mobilization and the acquisition of technology. The Panel may wish to discuss the need to set up, at the national level, mechanisms for fund mobilization and financing in the form of national forestry funds and mechanisms for technology development and dissemination in the form of national forest technology centres;

(g) In view of the large amounts of private-sector financial flows and the need to complement these from ODA, the Panel may wish to consider urging donor countries to formulate incentives to encourage their private sector to invest in the development of forest resources in developing countries. Long-term investment in the development of forest resources in the developing countries would complement current investments in forest processing subsectors;

(h) An international workshop on finance, to be held in South Africa from 4 to 7 June 1996 and co-sponsored by Denmark, South Africa and UNDP, will focus on the feasibility and economic potential of various innovative financings. The Panel may wish to review the outcome of the workshop at its third session.

Table 4. Change in volume of official development assistance devoted to forestry, 1986-1993

(Millions of United States dollars)

	1986	1988	1990	1993	1990-1993 Annual variation
Bilateral					
Australia	2.7	5.3	6.3	11.0	+4.7
Canada	79.8	75.1	113.4	48.6	-64.8
Japan	20.5	83.0	117.2	84.0	-33.2
New Zealand	4.0	4.1	4.5	3.3	-1.2
Norway	6.7	12.6	6.1	11.2	+5.1
Switzerland	13.1	22.9	22.5	28.0	+5.5
United States of America	54.6	117.0	149.6	121.0	-28.6
Subtotal	181.4	320.0	419.6	307.1	-112.5
Austria	0.1	0.1	0.2	0.1	-0.1
Belgium	1.9	0.9	1.6	1.4	-0.2
Denmark	10.0	29.3	30.4	10.0	-20.4
Finland	31.2	22.0	36.8	28.0	-8.8
France	42.9	(42.9)	(42.9)	30.5	-12.4
Germany	34.0	147.3	203.0	173.1	-29.9
Ireland	0.3	0.2	0.2	(0.2)	-
Italy	a/	11.2	(11.2)	8.0	-3.2
Netherlands	28.5	32.1	46.0	60.6	+14.6
Portugal	0.1	0.1	0.1	(0.1)	-
Spain	a/	0.9	0.3	(0.3)	-
Sweden	49.1	57.9	72.0	37.1	-34.9
United Kingdom	35.2	23.1	28.5	45.2	+16.7
Subtotal	233.3	368.0	473.2	394.6	-78.6
European Commission	19.8	35.0	44.5	214.0	+169.5
Subtotal	253.1	403.0	517.7	608.6	+90.9
Total bilateral	434.5	723.0	937.3	915.7	-21.6
Multilateral					
AfDB	2.7	1.0	3.0	5.0	+2.0
AsDB	9.0	77.0	71.4	74.0	+2.6
IADB	8.5	6.8	9.8	65.3	+55.5
World Bank	122.3	115.5	169.5	276.0	+106.5
Subtotal	142.5	200.3	253.7	420.3	+166.6
ITTO b/	0	3.6	12.8	15.5	+2.7
FAO c/	10.8	11.4	14.8	14.1	-0.7
ILO	2.8	2.0	0.6	0.2	-0.4
UNDP	22.0	24.9	52.0	33.5	-18.5
UNEP	1.7	1.5	0.1	1.1	+1.0

	1986	1988	1990	1993	1990-1993 Annual variation
UNESCO	1.2	1.8	0.5	2.4	+1.9
UNIDO	2.0	2.8	2.8	0.4	-2.4
UNSO	15.0	12.2	18.1	10.0	-8.1
WFP	132.5	131.4	132.6	121.0	-11.6
GEF d/	0	0	0	10.3	+10.3
Subtotal	188	191.6	234.3	208.5	-25.8
Total multilateral	330.5	391.9	488.0	628.8	+140.8
Grand total	765.0	1 114.9	1 425.3	1 544.5	+119.2

Note: Figures in brackets ( ) are taken from preceding survey; official figures unavailable.

a/ Estimates unavailable.

b/ Total budget plus special funding for projects.

c/ Total budget of the FAO Forestry Department plus special funding for projects.

d/ Spending on forestry components of GEF projects.

Notes

1/ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigenda), resolution 1, annex III.

2/ Ibid., annex II.